

3

N: Key

Algebra 2 // 3.2 Practice // Practice 1

D: _____ P: 1 2 3 4 5 6
Mission Hills Math 2013Directions: Solve the following systems using Elimination

$$1. \begin{cases} 3x + y = 1 \\ -2x + y = -4 \end{cases}$$

$$\underline{x = -3}$$

$$3(-3) + y = 1$$

$$\begin{array}{r} -9 + y = 1 \\ +9 \quad +9 \\ \hline y = 10 \end{array}$$

Solution: $(-3, 10)$

$$2. \begin{cases} x + y = -6 \\ -x + 2y = -27 \end{cases}$$

$$\begin{array}{r} 3y = -33 \\ \hline y = -11 \end{array}$$

$$x + (-11) = -6$$

$$\begin{array}{r} x - 11 = -6 \\ +11 \quad +11 \\ \hline x = 5 \end{array}$$

Solution: $(5, -11)$

$$3. \begin{cases} 2x + \frac{1}{2}y = -2 \\ -2x - \frac{1}{4}y = 4 \end{cases}$$

$$\begin{array}{r} 8x + 2y = -8 \\ -8x - y = 16 \\ \hline y = 8 \end{array}$$

$$8x + 2(8) = -8$$

$$\begin{array}{r} 8x + 16 = -8 \\ -16 \quad -16 \\ \hline 8x = -24 \end{array}$$

$$\frac{8x}{8} = \frac{-24}{8} \rightarrow x = -3$$

Solution: $(-3, 8)$

$$4. \begin{cases} 2x - 3y = 61 \\ 2x + y = -7 \end{cases}$$

$$\begin{array}{r} 2x - 3y = 61 \\ -2x - y = -7 \\ \hline -4y = 68 \end{array}$$

$$\begin{array}{r} -4y = 68 \\ -4 \quad -4 \\ \hline y = -17 \end{array}$$

$$2x + (-17) = -7$$

$$\begin{array}{r} 2x - 17 = -7 \\ +17 \quad +17 \\ \hline 2x = 10 \end{array}$$

$$\frac{2x}{2} = \frac{10}{2} \rightarrow x = 5$$

Solution: $(5, -17)$

$$5. \begin{cases} x + 4y = 5 \\ 3x - 2y = -13 \end{cases}$$

$$\begin{array}{r} -3x - 12y = -15 \\ 3x - 2y = -13 \\ \hline -14y = -28 \end{array}$$

$$\begin{array}{r} -14y = -28 \\ -14 \quad -14 \\ \hline y = 2 \end{array}$$

$$x + 4(2) = 5$$

$$\begin{array}{r} x + 8 = 5 \\ -8 \quad -8 \\ \hline x = -3 \end{array}$$

$$\underline{x = -3}$$

Solution: $(-3, 2)$

$$6. \begin{cases} 2x + 3y = 5 \\ 4x + 6y = 10 \end{cases}$$

$$\begin{array}{r} -4x - 6y = -10 \\ 4x + 6y = 10 \\ \hline 0 + 0 = 0 \end{array}$$

$$0 = 0$$

$$0 = 0$$

true

Solution: ∞ many solutions.

$$7. \begin{cases} 2x + 5y = 8 \\ 7x + 2y = -3 \end{cases}$$

$$\begin{array}{r} -14x - 35y = -56 \\ 14x + 4y = -6 \\ \hline -31y = -62 \end{array}$$

$$2x + 5(2) = 8$$

$$\begin{array}{r} 2x + 10 = 8 \\ -10 \quad -10 \\ \hline 2x = -2 \end{array}$$

$$\frac{2x}{2} = \frac{-2}{2} \rightarrow x = -1$$

Solution: $(-1, 2)$

$$8. \begin{cases} -8x + 2y = 4 \\ -12x + 3y = -15 \end{cases}$$

$$\begin{array}{r} -24x + 6y = 12 \\ 24x - 6y = 30 \\ \hline 0 + 0 = 42 \end{array}$$

$$0 = 42$$

Not True

Solution: no solution

$$9. \begin{cases} 6x - 2y = -3 \\ 8x - 3y = -5 \end{cases}$$

$$\begin{array}{r} 18x - 6y = -9 \\ -16x + 6y = 10 \\ \hline 2x = 1 \end{array}$$

$$x = \frac{1}{2}$$

$$6(\frac{1}{2}) - 2y = -3$$

$$\begin{array}{r} 3 - 2y = -3 \\ -3 \quad -3 \\ \hline -2y = -6 \end{array}$$

$$\frac{-2y}{-2} = \frac{-6}{-2} \rightarrow y = 3$$

Solution: $(\frac{1}{2}, 3)$